



EXPRESS MAIL NO: EV 456 933 551 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: **PARKIN, et al.**

Confirmation No.: **9210**

Serial No.: **09/874,472**

Art Unit **1645**

Filed: **June 4, 2001**

Examiner: **To be Assigned**

For: **MEANS AND METHODS FOR  
MONITORING PROTEASE  
INHIBITOR ANTIRETROVIRAL  
THERAPY AND GUIDING  
THERAPEUTIC DECISIONS IN  
THE TREATMENT OF HIV/AIDS**

Attorney Docket No.: **11068-037-999**

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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**JUN 28 2004**  
TECHNOLOGY CENTER R3700

Sir:

In accordance with the duty of disclosure provisions of 37 C.F.R. §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ A list of all patents, publications, applications, or other information submitted for consideration by the office.
- 1b. A legible copy of :
- ☐ Each U.S. patent application publication and U.S. and foreign patent;
  - ☐ Each publication or that portion which caused it to be listed on the PTO-1449;
  - ☐ For each cited pending U.S. application, the application specification including the claims, and any drawing of the application, or portion of the application which caused it to be listed on the PTO-1449 including any claims directed to that portion;
  - ☐ all other information or portion which caused it to be listed on the PTO-1449.
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or PCT International Search Report.
- 1d. ☐ Explanations of relevancy (ATTACHMENT 1(d), hereto) or English language abstracts of the non-English language publications.
2. ☒ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(b):
- ☐ Within three months of the filing date of a national application other than a continued prosecution application under §1.53(d);

- ☐ Within three months of the date of entry of the national stage as set forth in §1.491 in an international application;
- ☒ Before the mailing of the first Office action on the merits;
- ☐ Before the mailing of a first Office action after the filing of a request for continued examination under §1.114.

3. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(c) after the period specified in 37 C.F.R. §1.97(b), but before the mailing date of any of a final action under 37 C.F.R. §1.113, a notice of allowance under 37 C.F.R. §1.311 or an action that otherwise closes prosecution in the application.

*(Check either Item 3a or 3b)*

- 3a. ☐ The Certification Statement in Item 5 below is applicable. Accordingly, no fee is required.
- 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is:
- ☐ enclosed
  - ☐ to be charged to Jones Day Deposit Account No. 503013.

*(Item 3b to be checked if any reference known for more than 3 months)*

4. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(d) after the period specified in 37 C.F.R. §1.97(c), but on or before the date of payment of the issue fee.

The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:

- ☐ enclosed.
- ☐ to be charged to Jones Day Deposit Account No. 503013.

The Certification Statement in Item 5 below is applicable.

5. ☐ Certification Statement (applicable if Item 3a or Item 4 is checked)

*(Check either Item 5a or 5b)*

- 5a. ☐ In accordance with 37 C.F.R. §1.97(e)(1), it is certified that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- 5b. ☐ In accordance with 37 C.F.R. §1.97(e)(2), it is certified that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, was known by any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

6. ☒ This application is a continuation application under 37 C.F.R. §1.60 or §1.53(b) or (d).

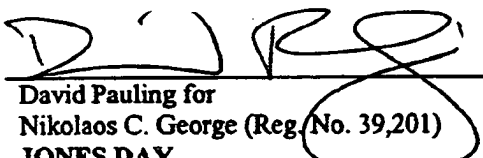
*(Check appropriate Items 6a, 6b and/or 6c)*

- 6a. ☐ A Petition to Withdraw from issue under 37 C.F.R. §1.313(b)(5) is concurrently filed herewith.

- 6b. ☒ Copies of publications listed on Form PTO-1449 from prior application nos. 09/591,899, 09/663,458 or 09/766,344, filed on June 12, 2000, September 15, 2000 and January 19, 2001, respectively, of which this application claims priority under 35 U.S.C. §120, are not being submitted pursuant to 37 C.F.R. §1.98(d).
- 6c. ☐ Copies of the publications listed on Form PTO-1449 were not previously cited in prior application Serial No. , filed on , and are provided herewith.
7. ☐ This is a Supplemental Information Disclosure Statement. (Check Item 7a)
- 7a. ☐ This Supplemental Information Disclosure Statement under 37 C.F.R. §1.97(f) supplements the Information Disclosure Statement filed on . A bona fide attempt was made to comply with 37 C.F.R. §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental Information Disclosure Statement can be considered as if properly filed on .
8. ☐ In accordance with 37 C.F.R. §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:
- ( Check Item 8a, 8b, or 8c)
- 8a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office.
- 8b. ☐ set forth in the application.
- 8c. ☐ enclosed as an attachment hereto.
9. ☒ The Commissioner is authorized to charge any additional fee required or credit any overpayment for this Information Disclosure Statement and/or Petition to Jones Day Deposit Account No. 503013.
10. ☒ No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than a search report of a foreign counterpart application or PCT International Search Report if submitted herewith). 37 C.F.R. §§1.97(g) and (h).

Respectfully submitted,

Date: June 17, 2004

  
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P-56,056  
(Reg. No.)



# LIST OF REFERENCES SUBMITTED BY APPLICANT

(Use several sheets if necessary)

ATTY DOCKET NO.

11068-037-999

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Parkin *et al.*

FILING DATE

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GROUP

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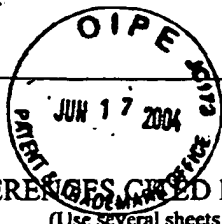
B20	A. K. Patick, <i>et al.</i> , (1990) "Genotypic and Phenotypic Characterization of Human Immunodeficiency Virus Type 1 Variants Isolated from Patients Treated with the Protease Inhibitor Nelfinavir," <i>Antimicrobial Agents and Chemotherapy</i> , 42: 2637-2644.
B21	Petit SC, <i>et al.</i> (1993) "The Specificity of the HIV-1 Protease" <i>Drug Discov Des</i> 1:69-83
B22	Roberts NA, <i>et al.</i> (1990) "Rational Design of Peptide-Based HIV Proteinase" <i>Science</i> 248:358361
B23	Roberts, N. A., (1995) "Drug-resistance patterns of saquinavir and other HIV proteinase inhibitors," <i>AIDS</i> 9 (supp 2) S27-S32
B24	Brian M. Sadler, <i>et al.</i> , (1999) "Safety and Pharmacokinetics of Amprenavir (141 W94), a Human Immunodeficiency Virus (HIV) Type 1 Protease Inhibitor, Following Oral Administration of Single Doses to HIV-Infected Adults," <i>Antimicrobial Agents and Chemotherapy</i> , 43: 1686-1692
B25	Sarkar G. and Sommer SS., (1990) "The "Megaprimer" Method of Site-Directed Mutagenesis," <i>BioTech</i> 8(4):404-407
B26	Mary L. Smidt, <i>et al.</i> , (1996) "A Mutation in Human Immunodeficiency Virus Type 1 Protease at Position 88, Located Outside the Active Site, Confers Resistance to the Hydroxyethylurea Inhibitor SC-55389A," <i>Antimicrobial Agents and Chemotherapy</i> , 41: 515-522
B27	M. H. St. Clair, <i>et al.</i> , (1996) "In Vitro Antiviral Activity of 141 W94 (VX-478) in Combination with Other Antiretroviral Agents," <i>Antiviral Research</i> 29: 53-56
B28	H. Tian, <i>et al.</i> , (1998) "Zidovudine/Lamivudine Co-resistance Is Preceded by a Transient Period of Zidovudine Hypersensitivity," 2nd International Workshop on HIV Drug Resistance and Treatment Strategies, Abstract 30
B29	Tisdale, M. <i>et al.</i> (1998): "Genotypic and phenotypic analysis of HIV from patients on ZDV/3TC/amprenavir combination therapy," <i>Int. Conf AIDS</i> 12:583 (Abstract No. 32312)
B30	Simon P. Tucker, <i>et al.</i> , (1998) "Estimate of the Frequency of Human Immunodeficiency Virus Type 1 Protease Inhibitor Resistance Within Unselected Virus Populations In Vitro," <i>Antimicrobial Agents and Chemotherapy</i> , 42: 478-480

EXAMINER

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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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## LIST OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

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## U.S. PATENT DOCUMENTS

*EXAMINER • INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	B01	5,766,842	6/98	Melnick <i>et al.</i>			
	B02	5,837,464	11/98	Capon <i>et al.</i>			

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

B03	Dreyer GB, <i>et al.</i> "A Symmetric Inhibitor Binds HIV-1 Protease Asymmetrically" <i>Biochemistry</i> (1993) 32:937-947
B04	J. Eron, <i>et al.</i> , Preliminary Assessment of 141 W94 in Combination with Other Protease Inhibitors," <i>5th Conference on Retroviruses and Opportunistic Infections</i> : (1995) 6
B05	Hill, A. <i>et al.</i> (1998) "Low frequency of genotypic mutations associated with resistance to AZT and 3TC after combination treatment with indinavir," <i>Int. Conf. AIDS</i> 12:812, (Abstract No. 6)
B06	E. E. Kim, (1995) "Crystal Structure of HIV-1 Protease in Complex with VX-478, a Potent and Orally Bioavailable Inhibitor of the Enzyme," <i>J. Am. Chem. Soc.</i> , 117: 1181-1182
B07	Lambert DM, <i>et al.</i> (1992) "Human Immunodeficiency Virus Type 1 Protease Inhibitors Irreversibly Block Infectivity of Purified Virions From Chronically Infected Cells" <i>Antimicrob Agents Chem</i> 36:982-98
B08	Brendan A. Larder, <i>et al.</i> , (1995) "Potential Mechanism for Sustained Antiretroviral Efficacy of AZT-3TC Combination Therapy," <i>Science</i> , 269: 696-699
B09	Janis K. Lazdins, <i>et al.</i> , (1997) "In Vitro Effect of al-Acid Glycoprotein on the Anti-Human Immunodeficiency Virus (HIV) Activity of the Inhibitor CGP 61775: A Comparative Study with Other Relevant HIV Protease Inhibitors," <i>J Infect. Dis.</i> , 175: 1063-1070
B10	David J. Livingston, <i>et al.</i> , (1995) "Weak Binding of VX-478 to Human Plasma Proteins and Implications for Anti-Human Immunodeficiency Virus Therapy," <i>J Infect. Dis.</i> , 172: 1238-124
B11	Bhuvaneshwari Mahalingam, <i>et al.</i> , (1999) "Structural and Kinetic Analysis of Drug Resistant Mutants of HIV Protease," <i>Biochem.</i> , 263: 1-9
B12	Miller M, <i>et al.</i> (1989) "Structure of Complex of Synthetic HIV-1 Protease with a Substrate-Based Inhibitor at 2.3 Å Resolution," <i>Science</i> 246:1149-1152
B13	Mohri H, <i>et al.</i> (1993) "Quantitation of Zidovudine-Resistant Human Immunodeficiency Virus Type 1 in the Blood of Treated and Untreated Patients," <i>PNAS</i> 90:25-29
B14	Robert L. Murphy, <i>et al.</i> , (1999) "Treatment with Amprenavir Alone or Amprenavir with Zidovudine and Lamivudine in Adults with Human Immunodeficiency Virus Infection" <i>J. Infect. Dis.</i> , 179: 808-81 E
B15	Najera I, <i>et al.</i> (1994) "Natural Occurrence of Drug Resistance Mutations in the Reverse Transcriptase of Human Immunodeficiency Virus Type 1 Isolates," <i>Aids Res Hum Retroviruses</i> 10:1479-1488
B16	Najera I, <i>et al.</i> (1995) "pol Gene Quasispecies of Human Immunodeficiency Virus: Mutations Associated with Drug Resistance in Virus From Patients Undergoing No Drug Therapy," <i>J Virol</i> 69:23-31
B17	Sarah Palmer, <i>et al.</i> , (1999) "Highly Drug-resistant HIV-1 Clinical Isolates Are Cross-resistant to Many Antiretroviral Compounds in Current Clinical Development," <i>AIDS</i> , 13: 661-667
B18	Neil T. Parkin, <i>et al.</i> , (1999) "Phenotypic changes in Drug Susceptibility Associated with Failure of Human Immunodeficiency Virus Type 1 (HIV-1) Triple Combination Therapy," <i>J Infect. Dis.</i> , 180: 865-870
B19	Judith A. Partaledis, <i>et al.</i> , (1995) "In Vitro Selection and Characterization of Human Immunodeficiency Virus Type 1 (HIV-1) Isolates with Reduced Sensitivity to Hydroxyethylamino Sulfonamide Inhibitors of HIV-1 Aspartyl Protease," <i>Journal of Virology</i> , 69: 5228-5235

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